

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Dana Alexa Totir et al.	Art Unit :	1745
Serial No. :	10/800,905	Examiner :	Raymond Alejandro
Filed :	March 15, 2004	Conf. No. :	1479
Title :	NON-AQUEOUS ELECTROCHEMICAL CELLS		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SECOND DECLARATION OF DANA ALEXA TOTIR, KIRAKODU S.
NANJUNDASWAMY AND MICHAEL POZIN UNDER 37 C.F.R. § 1.131

1. We are the inventors of the inventions claimed in the above-captioned patent application. The following work was conducted in the United States.

2. Two laboratory notebook pages from a laboratory notebook of Dana Alex Totir are attached. The notebook pages are signed by Ms. Totir and are dated prior to September 12, 2003. The two pages are true and complete copies from the original notebook, except that the dates on the laboratory notebook pages have been whited out and information is highlighted as described below.

3. The laboratory notebook pages demonstrate that electrochemical cells covered by claims 1-5, 8-12, 14-24, 28, 31-35, 39-43, and 45-46 were made and used prior to September 12, 2003.

(a) Some of the information on the notebook pages is highlighted for convenience. See in particular the highlighted information next to "Cell #1" on page 2489-110 and "Cell #2" on page 2489-111. The electrochemical cells were coin cell models that included a plastic housing, a cathode including "β-EMD" (β-electrolytic manganese dioxide) on a "primed Al" (aluminum) current collector. The aluminum current collector in turn was pressed on an "SS grid". SS is stainless steel, and the aluminum current collector thus was in contact with a second metal surface (the stainless steel) different from the surface of the aluminum current collector. The cells included a "Li" (lithium) anode and an electrolyte including "0.05 M" (page 2489-110) or "0.03 M" (page 2489-111) LiBOB." LiBOB is lithium bis(oxalato)borate. Thus, the electrochemical cells described on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 1-2, 5, 8-12, 31-35, and 45-46.

(b) Laboratory notebook pages 2489-110 and 2489-111 refer to "LiBOB in TDE10" in the highlighted information next to "Cell #1" and "Cell #2". TDE10 is an internal name for an electrolyte that includes, among other ingredients, lithium trifluoromethanesulfonate. Thus, electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 also include all of the requirements of claims 3 and 4.

(c) The aluminum cathode current collector used in the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 had a size of at least one dimension greater than 2 millimeters. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 14-16.

(d) The electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 were designed to be discharged once and then discarded, and thus are primary electrochemical cells as opposed to secondary (rechargeable) electrochemical cells. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 meet all of the requirements of claims 17-24, 28, and 39-43.

4. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Attorney's Docket No.: 08935-270001 / M-4996/Z-
03622

DMR

Dana Alexa Totir

11/15/07

Date

[Signature]

Kirakodu S. Nanjundaswamy

November. 14. 2007

Date

[Signature]

Michael Pozin

Nov. 14, 2007

Date

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Subject Matter

It appears that all the new measurements (results very much larger range)

but that a mass of cells.

Notes: • It had earlier proved by 35 feet in W contact
• not so for
• corrosion of Ag can act of the alloy @ 3.8V (n.37)

Therefore measure with Ag pseudo-reference electrode
3. electrode all 4. to Ag reference electrode, 6. connect
and reference electrode

also use out of 4. electrode a. Li reference in 1980
of (Ag) in 1980 in reference to Ag/AgCl
city of Ag (Ag), Li(CO), Li(CO) in Reference (Ag/AgCl)
of (Ag), Ag (Li), Li(CO) in Reference (Ag/AgCl)

compare the peak potential for Ag (Ag) and Li(CO)
to find out the potential difference.

1980/1981 p. one more a. Ag, Ag contact 1981 722
found a 35 feet in Ag/AgCl in 1981 (35)
2.00 cm, 0.05 M AgNO₃ in Ag/AgCl, Ag
1.2 M, 1980 Ag/AgCl
Ag/AgCl (33 mV)

1980/1981

- 2110 a.1. cor - Ag (Ag), Li(CO), Li(CO), 1.0 M AgNO₃ in 1980, CV
between 2.7-2.7 V @ 20 mV/sec
- 2120 a.2. cor - Ag (Ag), Ag (Li), Li(CO), 1.0 M AgNO₃ in 1980 - 700 mV
experiment to measure Ag potential in 1980
- 2110 a.3. cor - Ag (Ag), Li(CO), Ag (Li) - 1.0 M AgNO₃ in 1980-10
PDA Ag/AgCl - 0.7 V vs ref @ 20 mV/sec
- 2110 a.4. cor - Ag (Ag), Li(CO), Ag (Li) - 1.0 M AgNO₃ in 1980
CV - 0.6 - 0.7 V vs ref @ 20 mV/sec
- 2110 a.5. cor - same as above CV Ag/AgCl - 1.0 M AgNO₃ in 1980
CV - 0.6 - 0.7 V vs ref @ 20 mV/sec

Witnessed & Understood by me,

Date

Recorded by

Date

Mondra

Date

J. H. W.

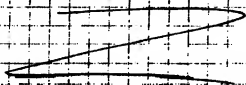
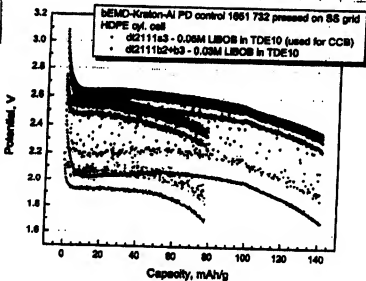
Subject Matter

- St 211 a1. cor - Cell #1 dissolved a page -10 - stopped after 170 pulses
HFC 85 @ 33 mHz
- dc 211 a2. cor - OCV for 2L (OK 91)
- St 211 a3. cor - Cell #1, HFC 85, 33 mHz, 600 pulses

Cell #2:

β -DMA Krypton a printed R₁ PD control 1651 732
pressed a 55 pulse HFC 85 called NO stop (10)
2.100 OCV (10k 0.08 1 6.00 0.2 1000 pulse)
16.2 V, HFC 85, cell.

- St 211 b1. cor - OCV circuit, 3L
- St 211 b2. cor - HFC 85, 23 mHz, 500 pulses
- St 211 b3. cor - HFC 85, 33 mHz, 1000 pulses (collected next day)



Witnessed & Understood by me,

Manda

Date

Date

Recorded by

SP

Date